

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA**

In the Matter of:	)	
Annual Review of Base Rates for Fuel	)	<b>DOCKET NO. 2021-2-E</b>
Costs of Dominion Energy, South	)	
Carolina, Inc.	)	

**SURREBUTTAL TESTIMONY OF  
R. THOMAS BEACH  
ON BEHALF OF  
THE SOUTH CAROLINA COASTAL CONSERVATION LEAGUE AND  
SOUTHERN ALLIANCE FOR CLEAN ENERGY**

**March 30, 2021**

1    **Q: PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

2    A: My name is R. Thomas Beach. I am principal consultant of the consulting firm  
3    Crossborder Energy. My business address is 2560 Ninth Street, Suite 213A, Berkeley,  
4    California 94710.

5    **Q: HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS**  
6    **DOCKET?**

7    A: Yes. On March 16, 2021, I provided direct testimony on behalf of the South  
8    Carolina Coastal Conservation League (“CCL”) and Southern Alliance for Clean Energy  
9    (“SACE”) addressing how the value of distributed solar resources should be assessed in  
10   this cost-recovery proceeding. Specifically, I recommended using the cost-benefit  
11   analysis that I previously conducted and filed in Docket No. 2019-82-E—attached to my  
12   direct testimony as **Exhibit RTB-2**—to quantify the full slate of benefits and costs of  
13   distributed energy resources (“DERs”) on the Dominion Energy South Carolina  
14   (“DESC”) system.

15   **Q: WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

16   A: The purpose of my surrebuttal testimony is to respond to the rebuttal testimony  
17   submitted by DESC Witnesses Margot Everett and Eric Bell on March 23, 2021.

18   **Q: PLEASE SUMMARIZE DESC WITNESS EVERETT’S REBUTTAL**  
19   **TESTIMONY.<sup>1</sup>**

20   A: Witness Everett testified that my direct testimony used “extremely aggressive  
21   assumptions regarding the values of all components in the NEM methodology.” She

---

<sup>1</sup> Rebuttal Testimony of Margot Everett (“Everett Rebuttal”) at 4-5, Annual Review of Base Rates for Fuel Costs for Dominion Energy South Carolina, Incorporated, Docket No. 2021-2-E (Mar. 23, 2021).

1 further claims that I disregard the methodology established in Docket No. 2014-246-E  
2 pursuant to a settlement between numerous parties, including DESC, CCL, and SACE,  
3 by assigning a non-zero value to certain components in the NEM value stack referred to  
4 in my direct testimony.<sup>2</sup>

5 **Q: PLEASE RESPOND TO WITNESS EVERETT’S CLAIM THAT YOU USE**  
6 **“EXTREMELY AGGRESSIVE ASSUMPTIONS REGARDING THE**  
7 **VALUES OF ALL COMPONENTS IN THE NEM METHODOLOGY.”**

8 A: Witness Everett continues to disregard quantifiable benefits of distributed solar that  
9 have been widely recognized across the country and even by this Commission. As I noted  
10 in my surrebuttal testimony in Docket No. 2019-182-E, all of the categories of benefits  
11 and costs in the NEM Methodology value stack are quantifiable, and have been  
12 quantified in other NEM or distributed generation (“DG”) benefit/cost studies. There  
13 are well-accepted techniques to perform these calculations, or reasonable values for these  
14 costs that can be derived from such studies performed for other utilities. If there is  
15 uncertainty about the magnitude of a specific benefit or cost, the default should not be to  
16 assign a zero value to that category, but to examine several cases that span a range of  
17 reasonable values for this benefit or cost and use that review to establish a reasonable  
18 value. For example, although the future regulation and costs for mitigating carbon  
19 emissions are uncertain, the Integrated Resource Plans (“IRPs”) of the South Carolina  
20 utilities, including DESC, make clear that reducing future carbon emissions is a  
21 significant driver of those plans. Thus, carbon compliance costs are not zero for  
22 ratepayers, because the utilities are planning today, and spending money today, to reduce

---

<sup>2</sup> *Id.* at 5.

1 their carbon emissions through the acquisition of new renewable generation and the  
2 replacement of older coal plants.

3 **Q: PLEASE RESPOND TO WITNESS EVERETT'S CLAIM THAT YOU**  
4 **DISREGARD KEY ELEMENTS OF THE NEM METHODOLOGY**  
5 **ESTABLISHED IN DOCKET NO. 2014-246-E BY USING NON-ZERO**  
6 **VALUES FOR CERTAIN COMPONENTS.**

7 A: Witness Everett testifies that I deviate from Commission-approved methodology  
8 by setting non-zero rates for components that the parties agreed should be set to zero in  
9 the stipulation adopted in Docket No. 2014-246-E.<sup>3</sup> Witness Everett is correct that the  
10 stipulation anticipated that some avoided cost components of the value of solar would be  
11 set at zero. For example, the stipulation states that “[a] zero monetary value will be used  
12 [for the cost of CO<sub>2</sub> emissions] until state or federal laws or regulations result in an  
13 avoidable cost on Utility systems for these emissions.”<sup>4</sup> However, as I noted in my direct  
14 testimony, the stipulation also explicitly expected zero or placeholder values to be  
15 updated. The stipulation states:

16 ...Where there is currently a lack of capability to accurately quantify a  
17 particular category and/or a lack of cost or benefit to the Utility system, that  
18 category has been included in the Methodology as a placeholder. (For  
19 example, Avoided CO<sub>2</sub> Emission Cost is included as a placeholder. A zero  
20 monetary value will be used until state or federal laws or regulations result  
21 in an avoidable cost on Utility systems for these emissions.) Placeholder

---

<sup>3</sup>Everett Rebuttal at 5; *see also* Act 236 Settlement, (Dec. 11, 2014)  
<https://dms.psc.sc.gov/Attachments/Matter/46a1fee8-155d-141f-233230a670190eb2>.

<sup>4</sup>Everett Rebuttal at 17; Order No. 2015-194 at 9; Act 236 Settlement Section III.8.

1 categories will be updated and included in the calculation of costs and  
2 benefits of net metering if and when capabilities to reasonably quantify  
3 those values and quantifiable costs or benefits to the Utility system in such  
4 categories become available.<sup>5</sup>

5 Importantly, the parties to the stipulation adopted in Order 2015-194 did not  
6 concede that those unquantified components *should* be zero. Moreover, the solar  
7 parties accepted placeholder or unquantified values only to facilitate an expeditious  
8 settlement at the time. Section II of the stipulation states:

9 The Solar Parties take the position (a) that due to environmental and other  
10 factors, if all inputs are fully quantified, the true value of solar would be  
11 such that each kilowatt hour ("kWh") of energy generated by a solar  
12 customer-generator, and intended primarily to offset part or all of the  
13 customer-generator's own electrical use, would be at least as valuable, for  
14 ratemaking purposes, as a kWh of power supplied to that customer from the  
15 Utility grid ("1:1 Rate")...The Solar Parties, however, acknowledge that  
16 quantifying the value of certain benefits of solar power would be difficult  
17 and contentious at this time. In the interest of settlement, the Solar Parties  
18 are willing to agree to forego quantifying the value of certain benefits of  
19 solar power so long as the 1:1 Rate can be achieved.<sup>6</sup>

20 Again, there is nothing to indicate that those placeholder or unquantified values accepted  
21 under the stipulation *should* be zero; those terms were merely unquantified at the time  
22 of the 2014 settlement.

---

<sup>5</sup> Act 236 Settlement Section III.8; *see also* Order No. 2015-194 at 20.

<sup>6</sup> Act 236 Settlement Section II.3, II.4.

1 **Q: IS NOW AN OPPORTUNE TIME FOR THE COMMISSION TO**  
 2 **REEVALUATE CERTAIN COMPONENTS OF THE VALUE OF SOLAR?**

3 A: Yes, now is an appropriate time to reevaluate the value of distributed solar in DESC  
 4 territory. Not only have five years passed since the Commission first adopted the NEM  
 5 Methodology, but Act 62, enacted in May 2019, directs the commission to “investigate  
 6 and determine the costs and benefits of the current net energy metering program” and  
 7 “establish a methodology for calculating the value of the energy produced by customer-  
 8 generators.”<sup>7</sup> In fact, the Commission recently opened Docket No. 2019-182-E pursuant  
 9 to Act 62 and explicitly for the purpose of evaluating the NEM value stack; my testimony  
 10 in this proceeding is simply reiterating my position in that proceeding.

11 I would also note that the Commission has considered and adopted new values and  
 12 assumptions relating to solar and carbon benefits and costs in recent proceedings, such  
 13 as DESC’s IRP proceeding in Docket No. 2019-226-E,<sup>8</sup> and the value of distributed solar  
 14 should not be insulated from those revised assumptions and values.

15 **Q: DO YOU HAVE ANY ADDITIONAL RESPONSES TO THE REBUTTAL**  
 16 **TESTIMONY OF DESC WITNESSES EVERETT AND BELL?**

17 A: Yes. I would note that many of the other issues raised by Witnesses Everett and  
 18 Bell were addressed in my direct and rebuttal testimony which were presented to the  
 19 Commission in Docket No. 2019-182-E.<sup>9</sup> I will briefly address several of those issues  
 20 here as well:

---

<sup>7</sup> S.C. Code Ann. § 58-40-20(C) (Supp. 2019)

<sup>8</sup> See Order 2020-832 at 47-60, 68-71.

<sup>9</sup> See Direct Testimony of R. Thomas Beach, Generic Docket to (1) Investigate and Determine the Costs and Benefits of the Current Net Energy Metering Program and (2) Establish a Methodology for Calculating the Value of the Energy Produced by Customer-Generators, Docket No. 2019-182-E (Oct. 8, 2020), <https://dms.psc.sc.gov/Attachments/Matter/22d99685->

- 1       • **Marginal Energy Costs:** Witness Everett testifies that the energy costs I use  
2       are out of date and overstated because they are based on previous estimates of  
3       marginal energy costs.<sup>10</sup> Though using new estimates may change the starting  
4       point of my analysis, it would not significantly change my overall conclusion  
5       that DESC's value of solar estimates are too low.
- 6       • **Statutory "Mandate" to Calculate Levelized Energy Prices over 10**  
7       **Years:** Witnesses Everett and Bell testify that Act 62 requires calculating  
8       levelized energy price over a 10-year-period and not a 25-year period as I  
9       recommend.<sup>11</sup> The provision in Act 62 that DESC Witnesses Bell and Everett  
10      refer to actually relates to power purchase agreements for utility-scale  
11      qualifying facilities.<sup>12</sup> Nothing in Order 2015-194 requires levelized energy

---

de59-4219-9ed1-3149619bfaf1; Rebuttal Testimony of R. Thomas Beach ("Beach Rebuttal, Docket No. 2019-182-E"), Generic Docket to (1) Investigate and Determine the Costs and Benefits of the Current Net Energy Metering Program and (2) Establish a Methodology for Calculating the Value of the Energy Produced by Customer-Generators, Docket No. 2019-182-E (Oct. 29, 2020), <https://dms.psc.sc.gov/Attachments/Matter/363def72-2ad5-48bd-9e27-0070b2c05459>.

<sup>10</sup> Everett Rebuttal at 7-8.

<sup>11</sup> Everett Rebuttal at 8; Rebuttal Testimony of Eric H. Bell ("Bell Rebuttal") at 8-9, Annual Review of Base Rates for Fuel Costs for Dominion Energy South Carolina, Incorporated, Docket No. 2021-2-E (Mar. 23, 2021).

<sup>12</sup> See S.C. Code Ann. § 58-41-20(F)(1). The statute specifically states:

Electrical utilities, subject to approval of the commission, shall offer to enter into fixed price power purchase agreements with small power producers for the purchase of energy and capacity at avoided cost, with commercially reasonable terms and a duration of ten years. The commission may also approve commercially reasonable fixed price power purchase agreements with a duration longer than ten years, which must contain additional terms, conditions, and/or rate structures as proposed by intervening parties and approved by the commission, including, but not limited to, a reduction in the contract price relative to the ten year avoided cost."

*Id.* This section also clarifies that "Nothing in this section prohibits the commission from adopting various avoided cost methodologies or amending those methodologies in the public interest." See S.C. Code Ann. § 58-41-20(F)(1).

costs be limited to 10 years. Resources such as distributed solar that have 25- to 30-year economic lives clearly will be undervalued if their energy production is valued for only the first ten years, and then arbitrarily assumed to be zero thereafter. I continue to recommend that the benefits and costs of DG be calculated over a time frame that corresponds to the useful life of a DG system, which, for distributed solar is 25 to 30 years. This treats distributed solar on the same basis as other utility resources, both demand- and supply-side. When a utility assesses the merits of adding a new power plant, or a new energy-efficiency program, the company will look at the costs to build and operate the plant or the program over its useful life, compared to the costs avoided by not operating or building other resource options.<sup>13</sup>

• **Avoided Criteria Pollutant and Other Avoided Environmental Costs:**

Witness Everett testifies that I include avoided costs relating to criteria pollutants and environmental costs in my avoided energy costs as opposed to separating these components out as DESC does per the NEM Methodology.<sup>14</sup> I agree that these costs should be listed separately from avoided energy costs. These costs typically are calculated as part of the production cost runs used to set avoided energy costs, and are not readily available to show separately unless one has access to the detailed outputs of the production cost model.

---

<sup>13</sup> In fact, Witness Everett herself used a twenty-year system life for purposes of her cost-benefit analysis in Docket 2019-182-E. See Direct Testimony of Margot Everett, Generic Docket to (1) Investigate and Determine the Costs and Benefits of the Current Net Energy Metering Program and (2) Establish a Methodology for Calculating the Value of the Energy Produced by Customer-Generators, Docket No. 2019-182-E (Oct. 8, 2020), <https://dms.psc.sc.gov/Attachments/Matter/4173d72e-51fa-4e42-a0fc-65ef077a8ad0>,

<sup>14</sup> Everett Rebuttal at 8-9.



- 1       • **Generation Capacity:** Witness Everett testifies that the Commission has  
2       established both an avoided cost of generation capacity value and a solar  
3       capacity contribution value and that my analysis disregards those Commission-  
4       approved values.<sup>15</sup> In fact, I do not ignore these values but consider them  
5       incorrect and out of date; the values that Witness Everett references do not  
6       reflect lifecycle benefits and do not adequately account for the avoided  
7       generation and capacity contributions of distributed solar. My position that  
8       avoided generation capacity cost should reflect lifecycle benefits is consistent  
9       with Act 62’s mandate to consider “the aggregate impact of customer-  
10      generators on the electrical utility’s long-run marginal costs of generation,  
11      distribution, and transmission.”<sup>16</sup>
- 12      • **Transmission and Distribution (“T&D”) Capacity:** Witnesses Everett and  
13      Bell suggest that my estimation of avoided T&D costs is not based on any  
14      showing that T&D costs are actually avoided as a result of customer  
15      generation.<sup>17</sup> In response, and without rehashing this debate that already took  
16      place in before the Commission in Docket No. 2019-182-E, I would note that  
17      DESC continues to insist that there is no avoided T&D benefit despite that  
18      benefit being quantified in nearly every jurisdiction, including by the Duke  
19      utilities that operate in South Carolina. I further note that there is no study  
20      quantifying the avoided T&D costs of distributed solar because DESC has  
21      refused to conduct such an analysis.

---

<sup>15</sup> *Id.* at 9-10.

<sup>16</sup> S.C. Code Ann. § 58-40-20(D)(1).

<sup>17</sup> Everett Rebuttal at 11-15; Bell Rebuttal at 3-4.

- 1       • **Fuel Hedge:** Witness Everett testifies that the long term hedging value  
2       quantified in my cost-benefit analysis is already captured in avoided cost  
3       estimates because “the avoided costs assume some level of generation to meet  
4       load from a portfolio, which includes renewables, and thus lower reliance on  
5       natural gas.”<sup>18</sup> This response completely misunderstands the nature of avoided  
6       costs, which are the costs of the generation whose output is avoided, i.e. not  
7       taken, as a result of the use of the renewable output of distributed solar. The  
8       avoided resources are largely gas-fired utility plants whose costs clearly  
9       fluctuate with volatile short-term gas prices. By replacing this gas-fired  
10      generation with fixed-price renewables, this cost volatility is avoided, and a  
11      long-term hedge against such volatility is provided to ratepayers. Simply  
12      because a utility’s portfolio may include some utility-scale renewable  
13      generation (which is not avoided) does not mean that distributed solar does not  
14      provide a further hedge against natural gas price volatility. The hedging value  
15      would be zero only if no fossil generation is avoided.
- 16     • **Ancillary Services:** Witness Bell testifies that DERs are unable to provide  
17      ancillary services and thus the appropriate value for this component should be  
18      zero.<sup>19</sup> Again, avoided costs refer to the costs for the utility’s resources that are  
19      avoided, i.e. the costs for the generation and ancillary services from the utility’s  
20      system that are not produced as a result of the use of distributed solar. Whether  
21      distributed solar can or cannot supply ancillary services is not relevant.

---

<sup>18</sup> Everett Rebuttal at 19.

<sup>19</sup> Bell Rebuttal at 3.

Typically, any avoided ancillary service costs are captured in the production cost modeling used to establish avoided energy costs.

- **Societal Benefits:** Witness Bell testifies that federal and state tax credits already account for the value of the societal benefits of solar.<sup>20</sup> I note that the quantifiable societal benefits of distributed solar generation presented in my rebuttal testimony in Docket No. 2019-182-E total about 17 cents per kWh,<sup>21</sup> which far exceeds the value of the state and federal tax credits available to solar customers in South Carolina, which are about 8 cents per kWh.<sup>22</sup>
- **T&D Losses:** With respect to my calculation of T&D losses, Witness Everett notes that the methodology to quantify those costs “is still under consideration” in Docket No. 2019-182-E, and recommends that the Commission continue using the current methodology until a revised calculation is adopted.<sup>23</sup> I agree with Witness Everett in principle on this point but would broaden it; *any* revisions to cost-benefit component values approved by the Commission in Docket No. 2019-182-E should be carried over and applied to the determination of the NEM DER in this proceeding. The Company uses the methodology approved in Order 2015-194 to calculate the NEM DER incentive. To the extent the methodology is updated and improved as a result of the Commission’s final order in Docket No. 2019-182-E, those updates should

---

<sup>20</sup> Bell Rebuttal at 9-10.

<sup>21</sup> Beach Rebuttal, Docket No. 2019-182-E, at 19-21.

<sup>22</sup> The 8 cents per kWh value of the state and federal solar tax credits is derived from our model of the levelized cost of energy (“LCOE”) from distributed solar in South Carolina. The LCOE for distributed solar is 9.4 cents/kWh with the tax credits, 17.2 cents/kWh without them.

<sup>23</sup> Everett Rebuttal at 22-23.

1           apply to the determination of the NEM DER incentive that is appropriately  
2           recoverable from customers over the forecasted period (May 2021 through  
3           April 2022).

4   **Q: REGARDING T&D CAPACITY COSTS, WITNESS EVERETT ASSERTS**  
5       **THAT THE COMPANY DID NOT “SET” THOSE VALUES AT ZERO,**  
6       **BUT RATHER CALCULATED THEM AS ZERO. HOW DO YOU**  
7       **RESPOND?**

8   A: I find that to be a distinction without a difference. In each case, the Company  
9       simply assumes that capacity costs cannot be avoided by customer solar generation,  
10       which is inconsistent with utility experience across the country, including in the  
11       southeast. DESC’s conclusion that these components are zero results only because  
12       the Company makes the unreasonable assumption that solar resources can do  
13       nothing to avoid or reduce capital expenditures for T&D infrastructure. Not only  
14       is this assumption patently incorrect, it is costly for customers. While DESC may  
15       prefer to continue building out (and earning a return on) T&D infrastructure  
16       without regard to solar resource penetration, the result will be that customers pay  
17       for more T&D infrastructure than is actually needed. The Commission should  
18       recognize and welcome the cost-lowering effects that private customer investment  
19       in solar can have by avoiding costly T&D investments.

20   **Q. WITNESSES EVERETT AND BELL CLAIM THAT DER RESOURCES**  
21       **DO NOT AVOID T&D CAPACITY COSTS BECAUSE PEAK LOADS**  
22       **NOW OCCUR ON WINTER MORNINGS WHEN SOLAR RESOURCES**  
23       **ARE NOT PRODUCING SIGNIFICANTLY. HOW DO YOU RESPOND?**

1 A. DESC uses summer peak to allocate its generation and transmission costs to the  
 2 residential class.<sup>24</sup> Supporting this, my rebuttal testimony in Docket No. 2019-  
 3 182-E showed that, when one uses a longer, five-year time horizon, DESC's peak  
 4 loads (defined as loads with 10% of the annual peak hourly load) occur  
 5 predominantly in the summer months.<sup>25</sup>

6 Moreover, utilities do not make investments in their transmission and  
 7 distribution systems by looking only at when the system peak hour occurs. Instead,  
 8 they use data on when peak loads occur on the discrete components of the T&D  
 9 system (e.g. substations and circuits) that may need to be upgraded or replaced.  
 10 My analysis of the solar contribution to avoided T&D costs looked at the timing of  
 11 peak loads (again, defined as loads with 10% of the annual peak hourly load) at all  
 12 DESC transmission and distribution substations.<sup>26</sup> This is a far more detailed and  
 13 granular analysis than the DESC's broad-brush, incorrect assertion that only winter  
 14 morning loads drive its T&D costs. Many of the peak loads at DESC's substations  
 15 occur on summer afternoons when solar output is high. As a result, distributed  
 16 solar can make a significant – and definitely non-zero – contribution to reducing  
 17 the need for future investments in the DESC T&D system.

18 **DOES THIS CONCLUDE YOUR TESTIMONY?**

19 A: Yes.

---

<sup>24</sup> Direct Testimony of R. Thomas Beach at 30, Dominion Energy South Carolina, Incorporated Establishment of a Solar Choice Tariff Pursuant to S.C. Code Ann. Section 58-40-20, Docket Number 2020-229-E, <https://dms.psc.sc.gov/Attachments/Matter/b1a1f3c7-85aa-4998-b938-42b179eccab>; *see also* Direct Testimony of Allen Rooks at 6, Annual Review of Base Rates for Fuel Costs for Dominion Energy South Carolina, Incorporated, Docket No. 2021-2-E (Feb. 15, 2021).

<sup>25</sup> Beach Rebuttal, Docket No. 2019-182-E, at 6-7.

<sup>26</sup> *Id.* at 10-13.

CERTIFICATE OF SERVICE

I hereby certify that the parties listed below have been served with a copy of the *Surrebuttal Testimony of R. Thomas Beach* filed on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy by electronic mail or by deposit in the U.S. Mail, first-class, postage prepaid.

Alexander G. Shissias  
The Shissias Law Firm, LLC  
1727 Hampton Street  
Columbia, SC 29201  
Email: alex@shissiaslawfirm.com

Jenny R. Pittman  
Office of Regulatory Staff  
1401 Main Street, Suite 900  
Columbia, SC 29201  
Email: jpittman@ors.sc.gov

Carri Grube Lybarker  
South Carolina Department of Consumer  
Affairs  
Email: clybarker@scconsumer.gov

Michael Anzelmo , Counsel  
McGuirewoods, LLP  
1301 Gervais Street  
Suite 1050  
Columbia, SC 29201  
Email:  
manzelmo@mcguirewoods.com

K. Chad Burgess  
Dominion Energy Southeast Services,  
Incorporated  
220 Operation Way - MC C222  
Cayce, SC 29033  
Email: chad.burgess@dominionenergy.com

Jeffrey M. Nelson  
Office of Regulatory Staff  
1401 Main Street, Suite 900  
Columbia, SC 29201  
Email: jnelson@ors.sc.gov

Matthew W. Gissendanner  
Dominion Energy South Carolina,  
Incorporated  
220 Operation Way - MC C222  
Cayce, SC 29033-3701  
Email:  
matthew.gissendanner@dominionenergy.com

This 30 day of March, 2021.

s/ Kate Lee Mixson